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Selected Internet sites

(54) Abstract Title
Computer system for providing travel services

(57) A computer system (10) for providing travel-related services comprises means for enabling customers (11) to specify holiday preferences (12), means for storing these d tails (13), and means (14,15) for determining the suitability of holidays based on these preferences. The customer may be provided with the details of the best-suited holidays. The system may be used to indicate the suitability of holidays appearing on broadcast travel shows (16,17), using e.g. interactive television. The system may include means to book holidays, and the details may relate to special offers or late-availability holidays (20,21). E-mail may be used to advise the customer. The system may further include means to purchase travel insurance, means (18) to advise on and purchase foreign currency and travellers cheques, means (19) to purchase and/or book other travel services such as car hire, and means to allow reading and submitting comments about particular holidays or destinations. The suitability of a holiday may be determined by a suitability rating.
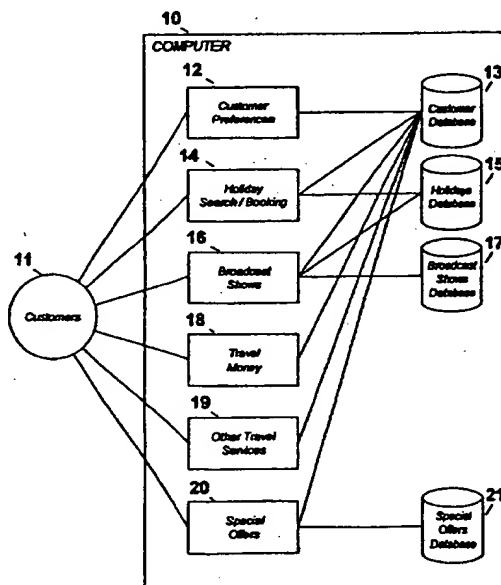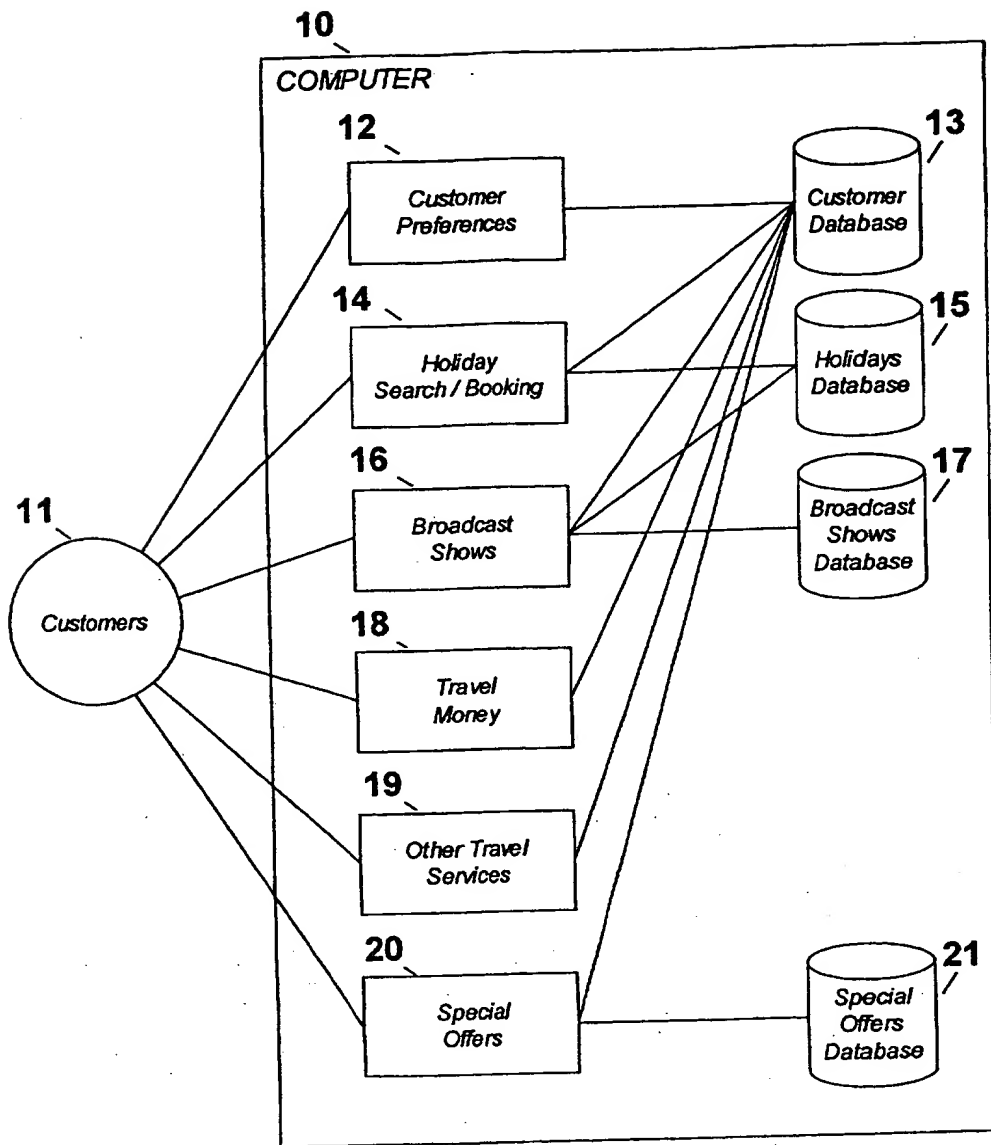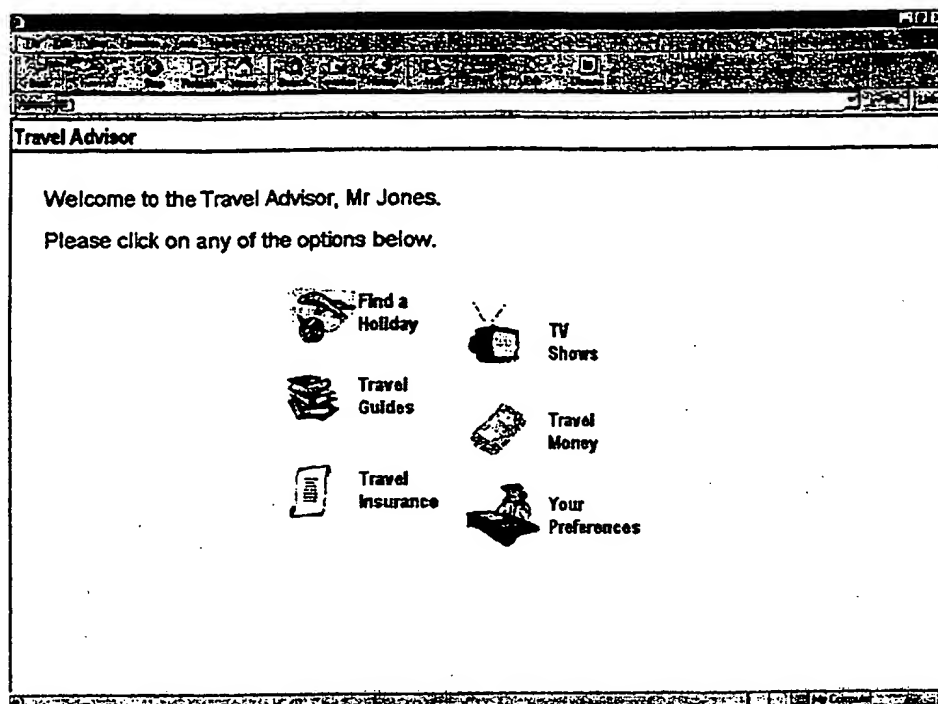
Fig. 1

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**Fig. 1**

**Travel Advisor**

Welcome to the Travel Advisor, Mr Jones.

Please click on any of the options below.

Find a Holiday

TV Shows

Travel Guides

Travel Money

Travel Insurance

Your Preferences

**Fig. 2**

**Travel Advisor**

Tell us a bit about yourself

How many major holidays do you take each year?  [One ▾]

On average, how much do you spend per person on each holiday?  [£300 - £600 ▾]

How old are you?  [25 to 30 ▾]

What is your marital status?  [Single ▾]

Do you have any children?  [Yes, two ▾]

[ Update Details ]  [ Cancel Without Updating ]

**Fig. 3**

**Travel Advisor**

Which destinations do you like and dislike?

For each of the following destinations, please can you indicate how much you think you would like to go there.

| | Would really like | Would quite like | Would not mind | Would not like | Would hate | No Opinion |
|---|---|---|---|---|---|---|
| Mediterranean | ○ | ● | ○ | ○ | ○ | ○ |
| Spanish Costas | ○ | ○ | ● | ○ | ○ | ○ |
| Other European Destinations | ○ | ● | ○ | ○ | ○ | ○ |
| Caribbean | ● | ○ | ○ | ○ | ○ | ○ |
| North America | ● | ○ | ○ | ○ | ○ | ○ |
| South America | ○ | ○ | ○ | ● | ○ | ○ |
| Africa | ○ | ○ | ○ | ○ | ● | ○ |
| India | ○ | ○ | ○ | ○ | ● | ○ |
| Australia | ○ | ○ | ○ | ○ | ○ | ● |
| China | ○ | ○ | ○ | ○ | ○ | ● |

[ Update Details ]  [ Cancel Without Updating ]

**Fig. 4**

**Travel Advisor**

What types of holiday do you like and dislike?

For each of the following types of holiday, please can you indicate how much you would like it.

| | Really like | Quite like | Don't mind | Don't like | Hate | No Opinion |
|---|---|---|---|---|---|---|
| Family | ● | ○ | ○ | ○ | ○ | ○ |
| Beach | ● | ○ | ○ | ○ | ○ | ○ |
| Exotic | ○ | ○ | ○ | ● | ○ | ○ |
| Cruise | ○ | ○ | ○ | ○ | ● | ○ |
| Safari | ○ | ○ | ○ | ○ | ○ | ● |
| Tour | ○ | ○ | ○ | ○ | ● | ○ |
| Skiing | ○ | ○ | ○ | ○ | ● | ○ |
| Culture | ○ | ○ | ○ | ○ | ● | ○ |

[ Update Details ]  [ Cancel Without Updating ]

**Fig. 5**

**Travel Advisor**

Find a
Holiday

When do you want to go on holiday? [Departing around ▼] [ ] / [ ] / [ ]
How long do you want to stay? [7 days ▼]
How much do you want to spend? [Up to £600 per person ▼]

[Find Holidays ?]

Return to menu

**Fig. 6**

**Travel Advisor**

Find a
Holiday

The following holidays have been found which appear to meet your requirements:

| Resort | Hotel | Departing | Suitability Rating (100% = perfect) | Price | |
|---|---|---|---|---|---|
| Marseille, France | Hotel De La Rue | 14/7/99 | 85% | £492 | more details |
| Orlando, USA | Rodeo Motel | 14/7/99 | 82% | £557 | more details |
| Sosua, Dominican Republic | Sol de Plata | 14/7/99 | 80% | £503 | more details |

[Find Holidays]

Return to menu

**Fig. 7**

Travel Advisor

TV
Shows

In this section, we provide details of holidays shown on TV over the past two weeks. Based on information you have provided to us, we can also indicate how well the holiday appears to meet your individual requirements.

Please click on a holiday show below for more details.

- Holiday, BBC1, 20 April
- Wish you were here, ITV, 19 April
- Rough Guide, BBC2, 19 April
- Holiday, BBC1, 13 April
- Wish you were here, ITV, 12 April

Return to main menu

**Fig. 8**

Travel Advisor

TV
Shows

*with you were here...?*

Martin
Roberts
on the
Nile

Judith
Chalmers
in Kenya

Suzanne
Dando in
Sydney

Anthea
Turner in
Skegness

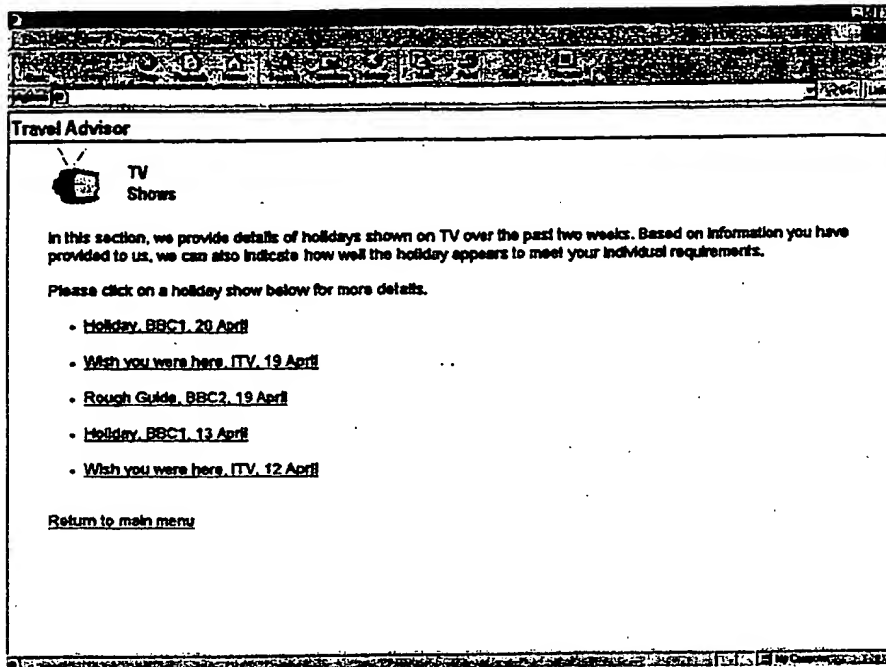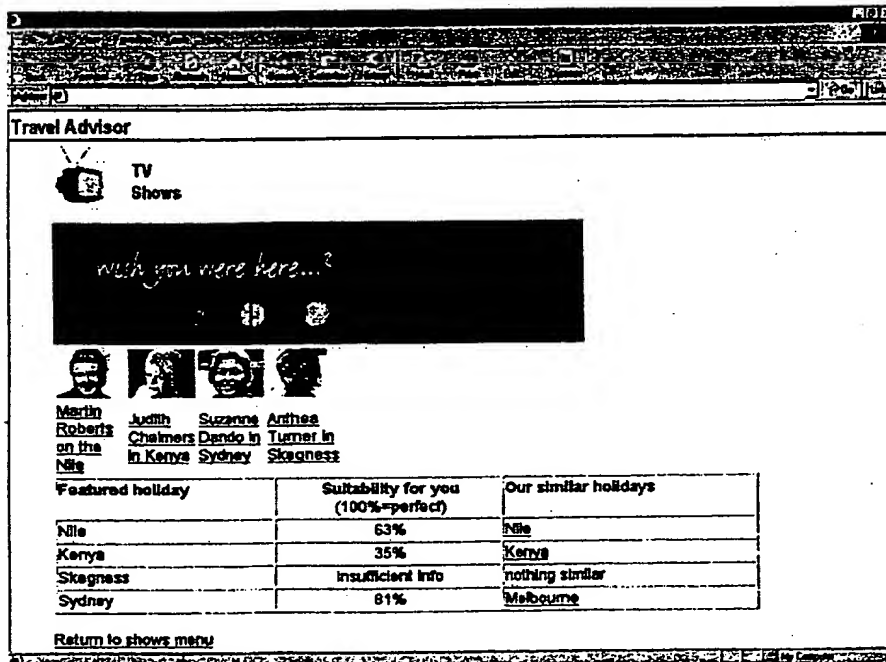| Featured holiday | Suitability for you (100%=perfect) | Our similar holidays |
|---|---|---|
| Nile | 63% | Nile |
| Kenya | 35% | Kenya |
| Skegness | Insufficient Info | nothing similar |
| Sydney | 81% | Melbourne |

Return to shows menu

**Fig. 9**

# COMPUTER SYSTEM FOR PROVIDING TRAVEL SERVICES

## Background to the invention

This invention relates to a computer system for providing travel services.

Consumers wishing to book a holiday often find a large array of information available to them, including holiday brochures from numerous companies and reviews and recommendations on broadcast travel shows.

Various holiday searching facilities are already in use, but these are focused around specific holiday searching on, for example, destination or a specific holiday type.

US Patent No 5732398 to Tagawa describes a kiosk-based self-service travel system for selling tours, cruises and vouchers to local attractions. As described, customers enter their preferences using the kiosk, which would then provide details of and sell tours, cruises and tickets to local attractions. However, this application only works on a one-off basis, with the details not being stored from one session to the next. As a result, customers would have to enter their details again whenever they wished to conduct a holiday search.

## Summary of the Invention

According to the invention, a computer system for providing travel-related services, comprises:
(a) means for enabling customers to specify holiday preferences;
(b) means for storing these preferences in a store of holiday details, for subsequent usage; and
(c) means for determining the suitability of holidays based on the stored customer preferences.

It can be seen that, in contrast to the prior system mentioned above, the computer system of the present invention is focused on a continuing relationship with the traveller. Once they have entered their preference details, these are stored centrally and are capable of being reused whenever required. As will be described, this enables a number of features, including quick searching to find an appropriate holiday, proactively identifying and advising customers of suitable appropriate special offers and late availability holidays, and assessment of the suitability of holidays featured on broadcast holiday shows.

## Brief Description of the Drawings

Figure 1 is a block diagram of a computer system embodying the invention.

Figure 2 to 9 are schematic representations of screen displays used in the system.

## Description of an Embodiment of the Invention

One embodiment of the invention will now be described by way of example with reference to the accompanying drawings.

The embodiment described is designed to be operated using a remote access channel such as the Internet or Interactive Television.

Figure 1 shows a computer system 10, which provides the service to a number of customers 11. The customers access various modules within the computer system to perform different functions. These include modules for:

- Entering and updating their Customer Preferences 12, which are stored in the Customer Database 13.
- Searching for and booking a holiday 14, which utilises the Customer Database and a Holidays Database 15.

- Determining the suitability of holidays featured on broadcast travel shows 16, which utilises the Customer Database and a Broadcast Shows database 17.
- Arranging and advising on travel money 18.
- Obtaining a quotation for and buying other travel services 19, such as travel insurance.

A further module 20 assesses the suitability of late availability and special offer holidays, stored in a Special Offers database 21, and advises the customers of suitable special offer holidays.

The customer accesses the system, e.g. over the Internet, and enters their customer identifier, e.g. customer number, and authentication information, e.g. a passcode.

They are then presented with a menu of available options, similar to that shown in Figure 2.

In order to make the service effective, on their first visit to the service, the customer is invited to complete the Customer Preferences section. These preferences are stored by the system, and on subsequent visits, the customer can view or update these preferences if required.

The Customer Preferences screens include:

- Personal information including age, sex, marital status, children's details, average number of holidays booked per year and average spending per person on holidays, similar to the screen shown in Figure 3.
- Previous locations visited by the customer (not shown).
- Opinions and preferences on holiday destinations, similar to the screen shown in Figure 4.
- Opinions and preferences on types of holiday, similar to the screen shown in Figure 5.

Customers are able to state "No Opinion" or "Decline to State" on these preferences; the system is able to evaluate the suitability of holidays intelligently based on incomplete information, although greater confidence in results will be obtained with complete information.

After establishing their preferences, customers can access the holiday search facility, using a screen similar to that in Figure 6.

Customers stipulate the date(s) they are planning to go on holiday and the duration. The system then searches against a database of holidays to find the best matches.

The suitability rating of a holiday is based on:
- The location – the specific location of the holiday, e.g. Marseille, is mapped on to a more general regional location, e.g. Mediterranean, to match with the customer preferences. If a customer has specified a positive or negative preference for a regional location, a weighting based on their strength of opinion is added to the overall suitability of the holiday. This weighting can be increased in magnitude dependent on the frequency with which the customer has visited the location in the past. For example, a customer who has never visited Australia but who specifies that they "Would like" to go there might score +10 for this, whereas a customer who has visited Australia many times and specifies that they "Would like" to go there might score +40 for this.
- The type of holiday – in the database there are fields indicating how suitable the holiday is against the types of holiday from the customer preferences screens. Each holiday will be totally unsuitable against most categories, as a resort based beach holiday will be unsuitable against the categories of skiing, cruise, tour, adventure and so on. However, some holidays will fit in to multiple categories,

e.g. beach and family, and twin centre holidays similarly may have ratings against different categories.

In addition, a confidence rating is calculated, indicating how confident the system is in the suitability rating given for the holiday. This is calculated based on:

- The number of "No opinion" responses specified in the customer preferences.
- Confidence ratings stored for each holiday destination, which may be based on how long the travel company has been using the hotel concerned, and/or whether the ratings were compiled by the hotel owner or the travel company.

This confidence rating is either used to modify the suitability, or is shown alongside it.

Optionally, the suitability rating can be normalised and expressed in a format which is easy to understand, e.g. a percentage from 0% (totally unsuitable) to 100% (totally suitable).

When the search facility assessed the available holidays, it determines the most suitable ones based on the suitability ratings optionally together with the confidence ratings.

These are presented to the customer as shown in Figure 7, and they can then browse further details about individual holidays. If there are more than a specified number of suitable holidays, the customer is able to sort or filter the holidays using a set of criteria including destination area and price.

From the screen of further details, the customer is preferably able to arrange online booking of the holiday.

Preferably, customers are able to add their comments and/or ratings on a destination or hotel, such comments/ratings to be viewable by other customers. Customers are encouraged to

provide such ratings, in particular upon their return from a holiday, and incentives such as discount vouchers for future holidays or loyalty points can be offered in return for completion of ratings. Customers are then also able to identify holidays that other customers with similar preferences to their own have taken and recommended.

From the main menu screen shown in Figure 2, customers can select an option to access information about broadcast travel shows, e.g. television holiday programmes. This displays a screen similar to Figure 8, listing recently broadcast shows. Customers can access information about a relevant show by clicking on the appropriate programme title, which displays a screen similar to Figure 9.

For each holiday featured on the selected show, the system displays a suitability rating for the holiday based on the customer's preferences and calculated as above, together with a link to details of similar holidays provided by the travel company or companies participating in the system. Customers are able to click on the suitability rating given to obtain a breakdown of how it was derived, i.e. which factors gave positive and negative ratings towards the overall suitability rating.

A further option from the main menu screen (Figure 2) enables customers to find information about and purchase currency and travellers cheques. One feature of this permits the customer to find out the most appropriate way to take travel money for the destination selected.

In addition, a feature is included which enables customers to work out how much currency they may need to take. After specifying the destination they are visiting, the customer is asked how many adults and children will be travelling, and for

how long they will be staying.  The customer is then presented with a series of questions, including:

- Will they be hiring a car for part or all of the holiday?
- Will they be going on many excursions?
- Where will they be eating, e.g. in the hotel as part of the package price, in economy restaurants, in mid-price restaurants, in expensive restaurants or self-catering?

Against each question there is a set of answer options, and each option has a cost associated with it for the specific destination, either as a duration based cost, e.g. car hire, or a person and duration based cost, e.g. meals, which is broken down into adult cost and child cost.

For duration based costs, the cost is multiplied by the duration of the holiday and by a factor based on the answer option selected.  For example, car hire may cost $50 per day, and for a 10 day break with car hire for the entire duration, the calculation would be $50 x 10 days x 100% giving $500. Alternatively, if the car hire had been for "a few days", the calculation would be $50 x 10 days x 30% giving $150.

For person and duration based costs, the adult cost is calculated in a similar way by multiplying the adult cost by the number of adults by the duration by a factor based on the answer option selected;  the child cost is calculated similarly, and these are added together.  For example, the cost for two adults and one child eating in mid-priced restaurants most of the time on a 10 day holiday could be calculated as follows (based on an adult meal cost of $20 per person and a child meal cost of $15 per person):

     Adults: $20 x 2 adults x 10 days x 70% = $280

     Child:  $15 x 1 child  x 10 days x 70% = $105

     Total cost: $280 + $105 = $385

These amounts are added together, along with additional person and duration based costs for snacks, entertainments etc, to

arrive at a figure for the total estimated cost of holiday spending.

Other services accessible from the main menu (Figure 2) include travel guides and travel insurance, which are similar to the existing services available from travel companies and financial institutions.

In parallel with the online service accessed by customers, a process also runs on a regular basis analysing late availability holidays and other special offers on behalf of registered customers. For each customer, the process determines suitability ratings for these holidays as described above, and either sends a regular e-mail message to the customer listing the most suitable offers, or advises the customer whenever a holiday is found where the suitability rating is above a predefined threshold.

## Some Possible Modifications

It will be appreciated that many modifications may be made to the system described above without departing from the scope of the present invention.

An alternative embodiment is for the one or more databases of holiday details to be maintained by travel companies, and for the system to interface with these rather than using a central database of these details.

Rather than using the suitability rating mechanism detailed above, an intelligent software agent can be used to analyse the holiday descriptions to determine suitability.

The facility of the system relating to broadcast shows can utilise Interactive Television or a similar mechanism to provide suitability ratings whilst the show is being broadcast.

# CLAIMS

1. A computer system for providing travel-related services, comprising:
(a) means for enabling customers to specify holiday preferences;
(b) means for storing these preferences in a store of holiday details, for subsequent usage; and
(c) means for determining the suitability of holidays based on the stored customer preferences.

2. A computer system according to Claim 1, further including means for providing the customers with details of the holidays which are best suited to their preferences.

3. A computer system according to either preceding claim, wherein the holiday details relate to holidays featured on broadcast travel shows.

4. A computer system according to Claim 3, further including means for enabling the customer to view the suitability of holidays featured on broadcast travel shows whilst the show is being broadcast, using Interactive Television or otherwise.

5. A computer system according to any preceding claim, wherein the holiday details relate to special-offer and late-availability holiday deals.

6. A computer system according to any preceding claim, further including means for enabling customers to book holidays.

7. A computer system according to any preceding claim, further including means for advising customers of the most suitable holidays by electronic mail or otherwise.

8. A computer system according to any preceding claim, further including means for enabling customers to identify the most

appropriate currency and travellers cheques to take to a selected destination, together with means for advising the customer on how much holiday money they are likely to need, and means for enabling customers to order or be reminded to order currency and travellers cheques.

9. A computer system according to any preceding claim, further including means for enabling customers to purchase travel insurance.

10. A computer system according to any preceding claim, further including means for enabling customers to purchase and/or book other travel related services, e.g. car hire.

11. A computer system according to any preceding claim, further including means for enabling customers to rate and/or comment on holiday destinations, and for making such ratings and/or comments viewable by other customers.

12. A computer system according to Claim 11, further including means for enabling customers to identify holidays that other customers with similar preferences to their own have taken, and to read their ratings and comments on such holidays.

13. A computer system comprising
(a) means for enabling customers to identify the most appropriate currency and travellers cheques to take to a selected destination,
(b) means for advising the customer on how much holiday money they are likely to need, and
(c) means for enabling customers to order or be reminded to order currency and travellers cheques.

14. A computer-automated method for providing travel-related services, comprising:

(a) enabling customers to specify holiday preferences;

(b) storing these preferences in a store of holiday details, for subsequent usage; and

(c) determining the suitability of holidays based on the stored customer preferences.

15. A metohd according to Claim 14, further including providing the customers with details of the holidays which are best suited to their preferences.

16. A method according to Claim 14 or 15, wherein the holiday details relate to holidays featured on broadcast travel shows.

17. A method according to Claim 16, further including enabling the customer to view the suitability of holidays featured on broadcast travel shows whilst the show is being broadcast, using Interactive Television or otherwise.

18. A method according to any one of Claims 14 to 17, wherein the holiday details relate to special-offer and late-availability holiday deals.

19. A method according to any one of Claims 14 to 18, further including enabling customers to book holidays.

20. A method according to any one of Claims 14 to 19, further including advising customers of the most suitable holidays by electronic mail or otherwise.

21. A method according to any one of Claims 14 to 20, further including enabling customers to identify the most appropriate currency and travellers cheques to take to a selected destination, advising the customer on how much holiday money

they are likely to need, and enabling customers to order or be reminded to, order currency and travellers cheques.

22. A method according to any one of Claims 14 to 21, further including enabling customers to purchase travel insurance.

23. A method according to any one of Claims 14 to 22, further including enabling customers to purchase and/or book other travel related services, e.g. car hire.

24. A method according to any one of Claims 14 to 23, further including enabling customers to rate and/or comment on holiday destinations, and making such ratings and/or comments viewable by other customers.

25. A method according to Claim 24, further including enabling customers to identify holidays that other customers with similar preferences to their own have taken, and to read their ratings and comments on such holidays.

26. A computer-automated method comprising
(a) enabling customers to identify the most appropriate currency and travellers cheques to take to a selected destination,
(b) advising the customer on how much holiday money they are likely to need, and
(c) enabling customers to order or be reminded to order currency and travellers cheques.

27. A system or method substantially as hereinbefore described with reference to the accompanying drawings.

# The Patent Office

INVESTOR IN PEOPLE

15

| | |
|---|---|
| **Application No:** GB 9918692.6 | **Examiner:** Ben Micklewright |
| **Claims searched:** 1-12,14-25,27 | **Date of search:** 10 March 2000 |

## Patents Act 1977
## Search Report under Section 17

**Databases searched:**

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

    UK Cl (Ed.R): G4A (AUXF AUXX)

    Int Cl (Ed.7): G06F 17/60

Other:    Online: WPI, EPODOC, PAJ, INSPEC, COMPUTER, Selected Internet sites

**Documents considered to be relevant:**

| Category | Identity of document and relevant passage | Relevant to claims |
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| X | WO98/35311 A1     (DELAORME) See e.g. page 120 lines 1-7 | 1-4,6,10, 14-17, 19,23 |
| X | WO97/32267 A1     (ELECTRONIC DATA SYSTEMS) See e.g. page 8 | 1-4,6,10, 14-17, 19,23 |
| X | WO97/27556 A1     (ELECTRONIC DATA SYSTEMS) See e.g. page 7 line 17 to page 8 line 15 | 1-4,6,7, 10,14-17, 19,20,23 |
| X | US5422809     (TOUCH SCREEN) See e.g. column 11 line 54 to column 12 line 7 | 1-4,6,10, 14-17, 19,23 |
| Y | "User Help at Worldtravelcenter.com" & http://www.worldtravelcenter.com/tools/help.html | 9,22 |

| | | | |
|---|---|---|---|
| X | Document indicating lack of novelty or inventive step | A | Document indicating technological background and/or state of the art. |
| Y | Document indicating lack of inventive step if combined with one or more other documents of same category. | P | Document published on or after the declared priority date but before the filing date of this invention. |
| | | E | Patent document published on or after, but with priority date earlier than, the filing date of this application. |
| & | Member of the same patent family | | |

An Executive Agency of the Department of Trade and Industry

| Category | Identity of document and relevant passage | Relevant to claims |
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